```
DDDDDDDDDDDD        CCCCCCCCCCCC  LLL
DDDDDDDDDDDD        CCCCCCCCCCCC  LLL
DDDDDDDDDDDD        CCCCCCCCCCCC  LLL
DDD         DDD  CCC              LLL
DDD         DDD  CCC              LLL
DDD         DDD  CCC              LLL
DDD         DDD  CCC              LLL
DDD         DDD  CCC              LLL
DDD         DDD  CCC              LLL
DDD         DDD  CCC              LLL
DDD         DDD  CCC              LLL
DDD         DDD  CCC              LLL
DDD         DDD  CCC              LLL
DDD         DDD  CCC              LLL
DDD         DDD  CCC              LLL
DDD         DDD  CCC              LLL
DDD         DDD  CCC              LLL
DDDDDDDDDDDD        CCCCCCCCCCCC  LLLLLLLLLLLLLLL
DDDDDDDDDDDD        CCCCCCCCCCCC  LLLLLLLLLLLLLLL
DDDDDDDDDDDD        CCCCCCCCCCCC  LLLLLLLLLLLLLLL
```

```
**FILE**ID**SET                                     D  8




          SSSSSSSS  EEEEEEEEEE  TTTTTTTTTT
          SSSSSSSS  EEEEEEEEEE  TTTTTTTTTT
        SS          EE              TT
        SS          EE              TT
        SS          EE              TT
        SS          EE              TT
          SSSSSS    EEEEEEEE        TT
          SSSSSS    EEEEEEEE        TT
                SS  EE              TT
                SS  EE              TT
                SS  EE              TT           ....
                SS  EE              TT           ....
        SSSSSSSS    EEEEEEEEEE      TT           ....
        SSSSSSSS    EEEEEEEEEE      TT           ....

        LL            IIIIII      SSSSSSSS
        LL            IIIIII      SSSSSSSS
        LL              II      SS
        LL              II      SS
        LL              II      SS
        LL              II      SS
        LL              II        SSSSSS
        LL              II        SSSSSS
        LL              II              SS
        LL              II              SS
        LL              II              SS
        LL              II              SS
        LLLLLLLLLL    IIIIII    SSSSSSSS
        LLLLLLLLLL    IIIIII    SSSSSSSS
```

```
0000          .TITLE  SET - SET PARAMETER DCLS COMMAND EXECUTION
0000          .IDENT  'V04-000'
0000
0000    ;
0000    ;****************************************************************************
0000    ;*                                                                          *
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0000    ;*                                                                          *
0000    ;*                                                                          *
0000    ;****************************************************************************
```

```
0000    ;
0000    ; SET PARAMETER DCLS COMMAND EXECUTION
0000    ;
0000    ;       SET DIRECTORY
0000    ;       SET PROTECTION
0000    ;       SET USER IDENTIFICATION CODE
0000    ;       SET VERIFY MODE
0000    ;       SET ON
0000    ;       SET CONTROL
0000    ;       SET PROMPT
0000    ;
0000    ; D. N. CUTLER 17-APR-77
0000    ;
0000    ; MODIFIED BY:
0000    ;
0000    ;       V03-015 HWS0095         Harold Schultz  25-Jul-1984
0000    ;               Add support for execute-only command procedures.
0000    ;
0000    ;       V03-014 HWS0011         Harold Schultz  13-Feb-1984
0000    ;               Use PRC_V_CARRCNTL to indicate presence/absence of
0000    ;               CR/LF in prompt string.
0000    ;               Fix broken branch.
0000    ;
0000    ;       V03-013 PCG0012         Peter George    12-Oct-1983
0000    ;               Fix bug in SET NOON, ON severity, SET ON sequence.
0000    ;
0000    ;       V03-012 PCG0011         Peter George    18-Aug-1983
0000    ;               Change the way that default protection is changed.
0000    ;
0000    ;       V03-011 KBT0577         Keith B. Thompson       8-Aug-1983
0000    ;               Fix a bug in kbt0572
0000    ;
0000    ;       V03-010 KBT0572         Keith B. Thompson       1-Aug-1983
0000    ;               Use $TRNLNM in SET DEFAULT
0000    ;
0000    ;       V03-009 PCG0010         Peter George    07-Jul-1983
0000    ;               Update SET UIC.
0000    ;
0000    ;       V03-008 PCG0009         Peter George    31-May-1983
0000    ;               Reference $RMEDEF.
0000    ;
0000    ;       V03-007 PCG0008         Peter George    27-May-1983
0000    ;               Add image verification.
0000    ;
0000    ;       V03-006 PCG0007         Peter George    30-Apr-1983
0000    ;               Change reference to CRLF.
0000    ;
0000    ;       V03-005 PCG0006         Peter George    17-Feb-1983
0000    ;               Remove reference to $CLIDEFQUALSET.
0000    ;               Convert to new table structure.
0000    ;
0000    ;       V03-004 PCG0005         Peter George    19-Nov-1982
0000    ;               Let SET PROMPT with no argument restore the default
0000    ;               prompt.
0000    ;
0000    ;       V03-003 PCG0004         Peter George    28-Oct-1982
0000    ;               Add SET PROMPT.
```

```
                                 0000  ;
                                 0000  ;        V03-002 PCG0003         Peter George    22-Oct-1982
                                 0000  ;                Fix keyword parsing bug in SET PROTECTION.
                                 0000  ;
                                 0000  ;        V03-001 PCG0002         Peter George    01-Jul-1982
                                 0000  ;                Modify SET CONTROL and SET PROTECTION to interact with
                                 0000  ;                DCL keyword parsing.
                                 0000  ;
                                 0000  ;---
                                 0000
                                 0000  ;
                                 0000  ; MACRO LIBRARY CALLS
                                 0000  ;
                                 0000
                                 0000          $$CLITABDEF                             ;TABLE STRUCTURE DEFINITIONS
                                 0000          WRKDEF                                  ;DEFINE COMMAND WORK AREA
                                 0000          PRCDEF                                  ;DEFINE PROCESS WORK AREA
                                 0000          PTRDEF                                  ;DEFINE RESULT PARSE DESCRIPTOR FORMAT
                                 0000          IDFDEF                                  ;DEFINE INDIRECT FILE DATA STRUCTURE
                                 0000          $LNMDEF
                                 0000          $LOGDEF                                 ;LOGICAL NAME DEFINITIONS
                                 0000          $RMEDEF                                 ;DEFINE RME CONSTANTS
                                 0000          $PCBDEF                                 ;DEFINE PCB OFFSETS
                                 0000          $PRVDEF                                 ;PRIVILEGE BIT DEFINITIONS
                                 0000          $CLIMSGDEF                              ;DEFINE CLI RELATED ERRORS
                                 0000
                                 0000  ;
                                 0000  ; LOCAL DATA
                                 0000  ;
                                 0000
                             00000000          .PSECT  DCL$ZCODE,BYTE,RD,NOWRT
                                 0000  ACCESS:                                         ;ACCESS PROTECTION CODES
                    52 57 45 44  0000          .ASCII  /DEWR/                          ;
                                 0004  CLASS:                                          ;PROTECTION CLASSES
                    53 4F 47 57  0004          .ASCII  /WGOS/                          ;
                                 0008
56 45 44 5F 45 4C 49 46 24 4D 4E 4C  0008  TABNAM: .ASCII  /LNM$FILE_DEV/                 ; Logical name table to search
                         0000000C  0014          TABNAMSZ=.-TABNAM                       ;  for device names
                                 0014
                                 0014  DCL$T_DSKNAM::                                  ; String for default device
        4B 53 49 44 24 53 59 53 00'  0014          .ASCIC  /SYS$DISK/                      ;
                              08  0014
                                 001D
                                 001D  CONTROL_CHARS:                                  ;SET CONTROL CHARACTERS
20 20 20 20 20 54 20 20 20 20 59 20  001D          .ASCII  / Y    T                          /
20 20 20 20 20 20 20 20 20 20 20 20  0029
                           20 20  0035
                    0037          .SBTTL  SET USER IDENTIFICATION CODE
                    0037  ;+
                    0037  ; DCL$SETUIC - SET USER IDENTIFICATION CODE
                    0037  ;
                    0037  ; THIS ROUTINE IS CALLED AS AN INTERNAL COMMAND TO EXECUTE THE SET USER
                    0037  ; IDENTIFICATION CODE DCLS COMMAND.
                    0037  ;
                    0037  ; INPUTS:
                    0037  ;
                    0037  ;       R8 = ADDRESS OF SCRATCH BUFFER DESCRIPTOR.
                    0037  ;       R9 = ADDRESS OF SCRATCH STACK.
                    0037  ;       R10 = BASE ADDRESS OF COMMAND WORK AREA.
                    0037  ;       R11 = BASE ADDRESS OF PROCESS WORK AREA.
                    0037  ;
                    0037  ; OUTPUTS:
                    0037  ;
                    0037  ;       THE CURRENT USER IDENTIFICATION CODE IS ESTABLISHED.
                    0037  ;-
                    0037
                    0037  DCL$SETUIC::                                        ;SET USER IDENTIFICATION CODE
          0C    C0  0037          ADDL    #PTR_C_LENGTH,-                     ;SKIP OPTION DESCRIPTOR
       BA AA        0039                  WRK_L_RSLNXT(R10)                   ;
       FFC2'    30  003B          BSBW    DCL$GETDVAL                         ;GET THE VALUE OF THE TOKEN DESCRIPTOR
                    003E
                    003E  ;
                    003E  ; TRANSLATE THE OVERALL STRING.
                    003E  ;
    79    51    7D  003E          MOVQ    R1,-(R9)                            ;PUSH DESCRIPTOR INTO SCRATCH STACK
          52    DD  0041          PUSHL   R2                                  ;ADDRESS OF STRING IN BUFFER
          3F    DD  0043          PUSHL   #63                                 ;MAXIMUM STRING TO RETURN
    50    5E    D0  0045          MOVL    SP,R0                               ;GET ADDRESS OF OUTPUT DESCRIPTOR
                    0048          $TRNLOG_S (R9),(R0),(R0)                    ;TRANSLATE THE NAME
    54    8E    7D  005B          MOVQ    (SP)+,R4                            ;RESET THE RESULTANT STRING DESCRIPTOR
                    005E
                    005E  ;
                    005E  ; SKIP PAST NODE AND DEVICE NAMES.  FIND START OF DIRECTORY SPECIFICATION.
                    005E  ;
        6544    94  005E          CLRB    (R5)[R4]                            ;MARK THE END OF STRING
65    54  3A    3A  0061  10$:    LOCC    #^A/:/,R4,(R5)                      ;LOOK FOR DEVICE NAME DELIMITER
          13    13  0065          BEQL    20$                                 ;BRANCH IF NO DEVICE HERE
54    50  01    C3  0067          SUBL3   #1,R0,R4                            ;SKIP PAST DEVICE NAME
   55  01 A1    9E  006B          MOVAB   1(R1),R5                            ;
    61    81    91  006F          CMPB    (R1)+,(R1)                          ;IS THIS A NODE NAME?
          06    12  0072          BNEQ    20$                                 ;BR IF ONLY DEVICE
          54    D7  0074          DECL    R4                                  ;SKIP PAST SECOND COLON
          55    D6  0076          INCL    R5                                  ;
          E7    11  0078          BRB     10$                                 ;LOOK FOR MORE NODES OR DEVICE
                    007A
                    007A  ;
                    007A  ; CONVERT THE DIRECTORY STRING TO A UIC.
                    007A  ;
          29    10  007A  20$:    BSBB    DCL$CVTUIC                          ;GET THE UIC
       0F 50    E9  007C          BLBC    R0,90$                              ;BRANCH IF ERROR
    79    51    D0  007F          MOVL    R1,-(R9)                            ;SAVE LONGWORD UIC
                    0082          $CMKRNL_S B^SETUIC,(R9)                     ;SET USER IDENTIFICATION CODE
                05  008E  90$:    RSB                                         ;RETURN WITH STATUS
                    008F
```

```
                              008F      ;
                              008F      ; SET USER IDENTIFICATION CODE
                              008F      ;
                        0000  008F      SETUIC: .WORD   0                       ;ENTRY MASK
    50   00000000'9F    D0    0091              MOVL    @#SCH$GL_CURPCB,R0      ;GET CURRENT PROCESS PCB ADDRESS
       00BC C0    6C    D0    0098              MOVL    (AP),PCB$L_UIC(R0)      ;SET USER IDENTIFICATION CODE
                              009D              STATUS  NORMAL                  ;
                        04    00A4              RET                             ;
```

```
                          00A5        .SBTTL  CONVERT STRING TO LONGWORD UIC
                          00A5  ;+
                          00A5  ; DCL$CVTUIC - CONVERT STRING TO LONGWORD UIC.
                          00A5  ;
                          00A5  ; INPUTS:
                          00A5  ;
                          00A5  ;       R4/R5 = DESCRIPTOR OF UIC STRING
                          00A5  ;
                          00A5  ; OUTPUTS:
                          00A5  ;
                          00A5  ;       R0 = STATUS
                          00A5  ;       R1 = LONGWORD UIC
                          00A5  ;       R2-R5 ARE TRASHED
                          00A5  ;-
                          00A5  DCL$CVTUIC::
               54    D7   00A5          DECL    R4                      ;SKIP LEADING BRACKET
               55    D6   00A7          INCL    R5                      ;
          7E   54    7D   00A9          MOVQ    R4,-(SP)                ;SAVE DIRECTORY DESCRIPTOR
               7E    D4   00AC          CLRL    -(SP)                   ;ALLOCATE LONGWORD FOR UIC
  FF A5    5B  8F    91   00AE          CMPB    #^A/[/,-1(R5)           ;START WITH A BRACKET?
               06    13   00B3          BEQL    10$                     ;IF EQL YES
     FF A5     3C    91   00B5          CMPB    #^A/</,-1(R5)           ;START WITH A BRACKET?
               2E    12   00B9          BNEQ    90$                     ;IF NEQ NO
          53   5E    D0   00BB  10$:    MOVL    SP,R3                   ;SAVE ADDRESS OF UIC LONGWORD
             0082    30   00BE          BSBW    CVTUIC                  ;CONVERT GROUP NUMBER
          85   2C    91   00C1          CMPB    #^A/,/,(R5)+            ;END WITH A COMMA?
               2E    12   00C4          BNEQ    50$                     ;IF NEQ NO
     02 A3     50    B0   00C6          MOVW    R0,2(R3)                ;SAVE GROUP NUMBER
             0076    30   00CA          BSBW    CVTUIC                  ;CONVERT MEMBER NUMBER
       65  5D  8F    91   00CD          CMPB    #^A/]/,(R5)             ;END WITH A BRACKET?
               05    13   00D1          BEQL    20$                     ;IF EQL YES
          65   3E    91   00D3          CMPB    #^A/>/,(R5)             ;END WITH A BRACKET?
               1C    12   00D6          BNEQ    50$                     ;IF NEQ NO
          63   50    B0   00D8  20$:    MOVW    R0,(R3)                 ;SAVE MEMBER NUMBER
               51  8ED0   00DB  30$:    POPL    R1                      ;GET UIC NUMBER
          5E   08    C0   00DE          ADDL    #8,SP                   ;POP UIC DESCRIPTOR
                          00E1          STATUS  NORMAL                  ;RETURN SUCCESS
                     05   00E8          RSB                             ;
                          00E9
                          00E9  ;
                          00E9  ; SIGNAL INVALID UIC SYNTAX
                          00E9  ;
                          00E9  90$:    STATUS  INVUIC                  ;SET INVALID UIC SYNTAX
          5E   0C    C0   00F0  95$:    ADDL    #12,SP                  ;RESTORE THE STACK
                     05   00F3          RSB                             ;
                          00F4
                          00F4  ;
                          00F4  ; TAKE UIC APART AND TRY TO CONVERT IT USING $ASCTOID.
                          00F4  ;
     54  04 A3       7D   00F4  50$:    MOVQ    4(R3),R4                ;GET UIC DESCRPITOR
  65  54   2C        3A   00F8          LOCC    #^A/,/,R4,(R5)          ;LOOK FOR A COMMA
               20    13   00FC          BEQL    60$                     ;BRANCH IF NONE
     04 A3     50    C2   00FE          SUBL    R0,4(R3)                ;GET LENGTH OF GROUP NAME
               50    D7   0102          DECL    R0                      ;CREATE DESCRIPTOR OF REST OF UIC
               51    D6   0104          INCL    R1                      ;
          54   50    7D   0106          MOVQ    R0,R4                   ;SAVE DESCRIPTOR OF REST OF UIC
                          0109          $ASCTOID_S  NAME=4(R3),-        ;GET THE GROUP ID
```

```
                         0109                  ID=(R3)                     ;
           D6 50    E9   0117         BLBC     R0,95$                      ;BRANCH IF ERROR
       04 A3   54   7D   011A         MOVQ     R4,4(R3)                    ;SAVE DESCRIPTOR OF REST OF UIC
                         011E
  65    54  5D 8F   3A   011E  60$:   LOCC     #^A/]/,R4,(R5)              ;LOOK FOR A CLOSING BRACKET
               06   12   0123         BNEQ     65$                         ;BRANCH IF FOUND
    65    54   3E   3A   0125         LOCC     #^A/>/,R4,(R5)              ;LOOK FOR A CLOSING BRACKET
               BE   13   0129         BEQL     90$                         ;BRANCH IF NONE
       04 A3   50   C2   012B  65$:   SUBL     R0,4(R3)                    ;GET LENGTH OF MEMBER NAME
                         012F         $ASCTOID_S  NAME=4(R3),-             ;GET THE UIC
                         012F                  ID=(R3)                     ;
            B0 50   E9   013D         BLBC     R0,95$                      ;BRANCH IF ERROR
             FF98   31   0140         BRW      30$                         ;SET THE UIC
                         0143
                         0143  ;
                         0143  ; CONVERT ASCII OCTAL UIC COMPONENT TO NUMERIC WORD
                         0143  ;
               50   7C   0143  CVTUIC: CLRQ    R0                          ;CLEAR ACCUMULATION AND CHARACTER
    51    65   30   83   0145  10$:   SUBB3    #^A/0/,(R5),R1              ;GET NEXT CHARACTER
               0D   19   0149         BLSS     20$                         ;IF LSS NOT DIGIT
          51   08   D1   014B         CMPL     #8,R1                       ;OCTAL DIGIT?
               08   15   014E         BLEQ     20$                         ;IF LEQ NO
     50      6140   7E   0150         MOVAQ    (R1)[R0],R0                 ;ACCUMULATE RESULT
               55   D6   0154         INCL     R5                          ;POINT TO NEXT CHARACTER
               ED   11   0156         BRB      10$                         ;
               05   05   0158  20$:   RSB                                  ;
                         0159
```

```
                              0159         .SBTTL  SET DEFAULT DEVICE AND/OR DIRECTORY
                              0159 ;+
                              0159 ; DCL$SETDEFALT - SET DEFAULT DEVICE AND/OR DIRECTORY
                              0159 ;
                              0159 ; THIS ROUTINE IS CALLED AS AN INTERNAL COMMAND TO EXECUTE THE SET DEFAULT
                              0159 ; DCLS COMMAND.
                              0159 ;
                              0159 ; INPUTS:
                              0159 ;
                              0159 ;       R8 = ADDRESS OF SCRATCH BUFFER DESCRIPTOR.
                              0159 ;       R9 = ADDRESS OF SCRATCH STACK.
                              0159 ;       R10 = BASE ADDRESS OF COMMAND WORK AREA.
                              0159 ;       R11 = BASE ADDRESS OF PROCESS WORK AREA.
                              0159 ;
                              0159 ; OUTPUTS:
                              0159 ;
                              0159 ;       R4,R5 = STRING DESCRIPTOR FOR DIRECTORY PORTION
                              0159 ;       SYS$DISK = DEFAULT DISK
                              0159 ;       THE CURRENT DEFAULT DIRECTORY IS ESTABLISHED.
                              0159 ;-
                              0159
                   0000000A   0159 MAX_TRANS_LVLS = 10                    ; maximum translation levels allowed
                              0159
                              0159 ;
                              0159 ; LNM service buffer offsets from R8
                              0159 ;
                              0159
                   00000000   0159 Q_LOGNAM        = 0                    ; Logical name descriptor
                   00000008   0159 Q_TABLE         = 8                    ; Table name descriptor
                   00000010   0159 L_ATTR          = 16                   ; Attributes longword
                   00000014   0159 L_MAX_INDEX     = 20                   ; Max Index
                   00000018   0159 W_STRING_LEN    = 24                   ; String length
                   0000001C   0159 T_STRING_BUF    = 28                   ; String buffer
                   0000011C   0159 S_XLT_BUF       = 284                  ; Output buffer size
                              0159
                              0159
                              0159 DCL$SETDEFALT::                        ; SET DEFAULT
                   0C    C0   0159         ADDL2   #PTR_C_LENGTH,-        ; skip option descriptor
                BA AA         015B                 WRK_L_RSLNXT(R10)      ;
                FEA0'    30   015D         BSBW    DCL$GETDVAL            ; <R1,R2> = token
                              0160
                              0160 ;
                              0160 ; Translate the overall string to get 1 level of translation
                              0160 ;
                              0160
             5C    0A    D0   0160         MOVL    #MAX_TRANS_LVLS,AP     ; set max translation counter
 59    0000011C    8F    C2   0163         SUBL2   #S_XLT_BUF,R9          ; allocate buffer
             58    59    D0   016A         MOVL    R9,R8                  ; save addr of buffer
                              016D
                              016D ;
                              016D ; Create item list for $TRNLNM
                              016D ;
                              016D
                   79    7C   016D         CLRQ    -(R9)                  ; clear last longword and length addr
        79    10   A8    DE   016F         MOVAL   L_ATTR(R8),-(R9)       ; set up attributes item
       00030004    8F    D0   0173         MOVL    #<LNM$_ATTRIBUTES@16>+4,-;
                   79         0179                 -(R9)                  ;
```

```
      79    18 A8    3E  017A          MOVAW   W_STRING_LEN(R8),-(R9)   ; string size goes here
      79    1C A8    9E  017E          MOVAB   T_STRING_BUF(R8),-(R9)   ; string buffer
   000200FF    8F    D0  0182          MOVL    #<LNM$_STRING@16>+255,-  ;
               79        0188                  -(R9)                    ;
               79    D4  0189          CLRL    -(R9)                    ; no output size
      79    14 A8    DE  018B          MOVAL   L_MAX_INDEX(R8),-(R9)    ; max index here
   00070004    8F    D0  018F          MOVL    #<LNM$_MAX_INDEX@16>+4,- ;
               79        0195                  -(R9)                    ;
   08 A8       0C    9A  0196          MOVZBL  #TABNAMSZ,Q_TABLE(R8)    ; create descriptor of logical name
0C A8   FE6A   CF    9E  019A          MOVAB   TABNAM,Q_TABLE+4(R8)     ;  table to look in
      68       51    7D  01A0          MOVQ    R1,Q_LOGNAM(R8)          ; set up logical name
                         01A3          $TRNLNM_S -                      ; translate the logical name
                         01A3                  TABNAM=Q_TABLE(R8),-     ;
                         01A3                  LOGNAM=Q_LOGNAM(R8),-    ;
                         01A3                  ITMLST=(R9)              ;
    0000'8F    50    B1  01B5          CMPW    R0,#SS$_NORMAL           ; success?
               08    13  01BA          BEQL    10$                      ; yes
    0000'8F    50    B1  01BC          CMPW    R0,#SS$_NOLOGNAM         ; no translation?
               18    13  01C1          BEQL    15$                      ; yes
                     05  01C3          RSB                              ; error
                         01C4
                         01C4  ;
                         01C4  ; Check if there was a really a translation, was it a search list
                         01C4  ; and if it was a concealed device.
                         01C4  ;
                         01C4
        14 A8        D5  01C4  10$:    TSTL    L_MAX_INDEX(R8)          ; was there a real non-search list name
           17        14  01C7          BGTR    20$                      ; branch if >0, search list
           10        19  01C9          BLSS    15$                      ; branch if <0, null translation
           08        E0  01CB          BBS     #LNM$V_CONCEALED,-       ; ignore if translation concealed
     10 10 A8            01CD                  L_ATTR(R8),20$
        18 A8        3C  01D0          MOVZWL  W_STRING_LEN(R8),-       ; set result string length
           68            01D3                  Q_LOGNAM(R8)
        18 A8        28  01D4          MOVC3   W_STRING_LEN(R8),-       ; copy translation into the buffer
        1C A8            01D7                  T_STRING_BUF(R8),-       ;  where the original token use to be
        04 B8            01D9                  @Q_LOGNAM+4(R8)
     54    68        7D  01DB  15$:    MOVQ    Q_LOGNAM(R8),R4          ; setup string descriptor
           10        11  01DE          BRB     40$                      ; parse string
                         01E0
                         01E0  ;
                         01E0  ; We could not use the translation because of concealed name or search list
                         01E0  ; so use the original input string
                         01E0  ;
                         01E0
     54    68        7D  01E0  20$:    MOVQ    Q_LOGNAM(R8),R4          ; get source descriptor
                         01E3
                         01E3  ;
                         01E3  ; Make sure the last character is a ":" so it acts like a device name
                         01E3  ;
                         01E3
  3A    FF A544      91  01E3          CMPB    -1(R5)[R4],#^A':'        ; is last char a colon?
           06        13  01E8          BEQL    40$                      ; continue if so
   6544    3A        90  01EA          MOVB    #^A':',(R5)[R4]          ; append a colon if not
           54        D6  01EE          INCL    R4                       ; count it as well
                         01F0
                         01F0  ;
                         01F0  ; Locate the device portion of the string, include any node names found as well
```

```
                        01F0  ;
                        01F0
           6544   94    01F0  40$:    CLRB    (R5)[R4]                ; mark end of string
      65    54 3A 3A    01F3          LOCC    #^A/:/,R4,(R5)          ; look for device name delimiter
            3D    13    01F7          BEQL    70$                     ; branch if no device here
         61 81    91    01F9          CMPB    (R1)+,(R1)              ; is this a node name?
            14    12    01FC          BNEQ    60$                     ; branch if only device
    53   01 A1    9E    01FE          MOVAB   1(R1),R3                ; set address of end of node string
         50 02    C2    0202          SUBL    #2,R0                   ;  and length of remainder
      63 50 3A    3A    0205          LOCC    #^A/:/,R0,(R3)          ; see if device name is here
            04    13    0209          BEQL    50$                     ; branch if none, just use node
    53   01 A1    9E    020B          MOVAB   1(R1),R3                ; set end of device name
         51 53    D0    020F  50$:    MOVL    R3,R1                   ; set end of equivalence name for disk
         52 55    D0    0212  60$:    MOVL    R5,R2                   ; save start of device string
         55 51    D0    0215          MOVL    R1,R5                   ; set start of directory string
         51 52    C2    0218          SUBL    R2,R1                   ; find length of device name
         54 51    C2    021B          SUBL    R1,R4                   ; adjust directory string length
                        021E
                        021E  ;
                        021E  ; At this point: <R1,R2> = device (+node)
                        021E  ;                <R4,R5> = rest of string
                        021E  ;
                        021E  ; Check if the device portion = 'SYS$DISK', if so ignore it
                        021E  ;
                        021E
 57   FDF2 CF     9E    021E          MOVAB   DCL$T_DSKNAM,R7         ; address of device name counted string
         56 87    9A    0223          MOVZBL  (R7)+,R6                ; get length and address of first byte
   50    51 56    C3    0226          SUBL3   R6,R1,R0                ; find difference in name string sizes
            50    D7    022A          DECL    R0                      ; check if 1 byte difference(the colon!)
            0D    12    022C          BNEQ    80$                     ; br if no-can't be the special name
            06    BB    022E          PUSHR   #^M<R1,R2>              ; save registers to be used
   67    62 56    29    0230          CMPC3   R6,(R2),(R7)            ; check for reserved system name
            06    BA    0234          POPR    #^M<R1,R2>              ; restore values
            03    12    0236  70$:    BNEQ    80$                     ; branch if no device name assignment
          007E    31    0238          BRW     130$                    ;  needed
                        023B
                        023B  ;
                        023B  ; If the device portion has a translation and it contains a
                        023B  ; directory specification, then repeat using the translation
                        023B  ; if a directory was specified in addition, then report an error
                        023B  ; that 2 directory specifications appeared in the same string
                        023B  ;
                        023B
            51    D7    023B  80$:    DECL    R1                      ; do not send colon into trnlnm
       68   51    7D    023D          MOVQ    R1,Q_LOGNAM(R8)         ; set up logical name
                        0240          $TRNLNM_S -                     ; translate the logical name
                        0240                  TABNAM=Q_TABLE(R8),-    ;
                        0240                  LOGNAM=Q_LOGNAM(R8),-   ;
                        0240                  ITMLST=(R9)             ;
 0000'8F    50    B1    0252          CMPW    R0,#SS$_NORMAL          ; success?
            08    13    0257          BEQL    90$                     ; yes
 0000'8F    50    B1    0259          CMPW    R0,#SS$_NOLOGNAM        ; no translation?
            3C    13    025E          BEQL    120$                    ; yes
                  05    0260          RSB                             ; error
                        0261
         14 A8    D5    0261  90$:    TSTL    L_MAX_INDEX(R8)         ; branch if no translation or
            36    12    0264          BNEQ    120$                    ;  search list
```

```
              08    E0  0266              BBS     #LNM$V_CONCEALED,-        ;  or concealed
        31 10 A8        0268                      L_ATTR(R8),120$
  18 A8  5B 8F    3A    026B              LOCC    #^A/[/,W_STRING_LEN(R8),-; is there a directory in there?
           1C A8        0270                      T_STRING_BUF(R8)         ;
              08    12  0272              BNEQ    95$                      ; ignore unless device/dir translation
     18 A8    3C    3A  0274              LOCC    #^A/</,W_STRING_LEN(R8),-; is there a directory in there?
           1C A8        0278                      T_STRING_BUF(R8)         ;
              20    13  027A              BEQL    120$                     ; ignore unless device/dir translation
              54    D5  027C       95$:   TSTL    R4                       ; any directory specified explicitly?
              11    12  027E              BNEQ    100$                     ; if so, then error in specification
                        0280
        18 A8     3C    0280              MOVZWL  W_STRING_LEN(R8),-       ; set result string length
              68        0283                      Q_LOGNAM(R8)             ;
        18 A8     28    0284              MOVC3   W_STRING_LEN(R8),-       ; copy translation into the buffer
        1C A8           0287                      T_STRING_BUF(R8),-       ;  where the original token use to be
        04 B8           0289                      @Q_LOGNAM+4(R8)          ;
      54   68     7D    028B              MOVQ    Q_LOGNAM(R8),R4          ; setup string descriptor
        08 5C     F5    028E              SOBGTR  AP,110$                  ; limit translation levels
                        0291       100$:  STATUS  DIRECT                   ; error in directory specification
              05        0298              RSB
          FF54    31    0299       110$:  BRW     40$                      ; continue translat.on device portion
                        029C
      51   68     7D    029C       120$:  MOVQ    Q_LOGNAM(R8),R1          ; restore device portion descriptor
           51     D6    029F              INCL    R1                       ; restore colon to end of string
                        02A1
                        02A1       ;
                        02A1       ; Create/update the logical name sys$disk which holds the current
                        02A1       ; default disk device.
                        02A1       ;
                        02A1
      00C6 8F     BB    02A1              PUSHR   #^M<R1,R2,R6,R7>         ; descriptors for logical and equivalence na
           00     DD    02A5              PUSHL   #0                       ; access mode is defaulted
        04 AE     7F    02A7              PUSHAQ  4(SP)                    ; address of equivalence name desc
        10 AE     7F    02AA              PUSHAQ  16(SP)                   ; descriptor of name to relate with
           02     DD    02AD              PUSHL   #LOG$C_PROCESS           ; table number
00000000'9F 08    FB    02AF              CALLS   #8,@#SYS$CRELOG          ; clear descriptor on return
        1C 50     E9    02B6              BLBC    R0,150$                  ; branch if error creating name
                        02B9
                        02B9       ;
                        02B9       ; Change the default directory specification (if any);
                        02B9       ;
                        02B9
           54     D5    02B9       130$:  TSTL    R4                       ; any directory field
           11     13    02BB              BEQL    140$                     ; branch if no
           30     BB    02BD              PUSHR   #^M<R4,R5>               ; descriptor for directory name
           7E     7C    02BF              CLRQ    -(SP)                    ; zeros as arguments 2 & 3
        08 AE     9F    02C1              PUSHAB  8(SP)                    ; address of directory string
00000000'GF 05    FB    02C4              CALLS   #5,G^SYS$SETDDIR         ; set the default directory
        07 50     E9    02CB              BLBC    R0,150$                  ; branch if error from rms
                        02CE       140$:  STATUS  NORMAL                   ; assume all is aok
           05           02D5       150$:  RSB
                        02D6
```

```
                            02D6            .SBTTL  SET PROTECTION
                            02D6     ;+
                            02D6     ; DCL$SETPROT - SET PROTECTION
                            02D6     ;
                            02D6     ; THIS ROUTINE IS CALLED AS AN INTERNAL COMMAND TO EXECUTE THE SET PROTECTION
                            02D6     ; DCLS COMMAND.
                            02D6     ;
                            02D6     ; INPUTS:
                            02D6     ;
                            02D6     ;       R8 = ADDRESS OF SCRATCH BUFFER DESCRIPTOR.
                            02D6     ;       R9 = ADDRESS OF SCRATCH STACK.
                            02D6     ;       R10 = BASE ADDRESS OF COMMAND WORK AREA.
                            02D6     ;       R11 = BASE ADDRESS OF PROCESS WORK AREA.
                            02D6     ;
                            02D6     ; OUTPUTS:
                            02D6     ;
                            02D6     ;       THE CURRENT DEFAULT PROTECTION IS ESTABLISHED.
                            02D6     ;
                            02D6     ;-
                            02D6
                            02D6     DCL$SETPROT::                                          ;SET PROTECTION
                  7E   D4   02D6            CLRL    -(SP)                                   ;WHERE TO RETURN PROTECTION
             7E   5E   D0   02D8            MOVL    SP,-(SP)                                ;NOTE WHERE PROTECTION IS TO BE PUT
                  7E   D4   02DB            CLRL    -(SP)                                   ;DON'T WANT TO SET PROTECTION
   00000000'9F    02   FB   02DD            CALLS   #2,@#SYS$SETDFPROT                      ;GET DEFAULT PROTECTION
             59   8E   D0   02E4            MOVL    (SP)+,R9                                ;COPY PROTECTION TO USEFUL REG
                  18   C0   02E7            ADDL    #2*PTR_C_LENGTH,-                       ;SKIP PAST OPTION DESCRIPTOR
               BA AA        02E9                    WRK_L_RS[NXT(R10)                       ; AND /DEFAULT QUALIFIER
              FD12'    30   02EB     10$:   BSBW    DCL$GETDVAL                             ;GET NEXT DESCRIPTOR VALUES
             55   03   91   02EE            CMPB    #PTR_K_PARAMETR,R5                      ;PARAMETER VALUE?
                  34   12   02F1            BNEQ    40$                                     ;IF NEQ NO
   FD0B CF   04   62   3A   02F3            LOCC    (R2),#4,CLASS                           ;LOCATE PROTECTION CLASS
                  43   13   02F9            BEQL    60$                                     ;IF EQL INVALID CLASS
                  50   D7   02FB            DECL    R0                                      ;CALCULATE STARTING BIT NUMBER
        58   50   04   C5   02FD            MULL3   #4,R0,R8
   59   04   58   0F   F0   0301            INSV    #^XF,R8,#4,R9                           ;START WITH NO ACCESS
             54   02   91   0306            CMPB    #PTR_K_COLON,R4                         ;PROTECTION VALUE SPECIFIED?
                  E0   12   0309            BNEQ    10$                                     ;IF NEQ NO
              FCF2'    30   030B            BSBW    DCL$GETDVAL                             ;GET PROTECTION VALUE DESCRIPTOR
             57   51   D0   030E            MOVL    R1,R7                                   ;SAVE LENGTH OF VALUE STRING
   FCE9 CF   04   82   3A   0311     20$:   LOCC    (R2)+,#4,ACCESS                         ;LOCATE PROTECTION CODE
                  1D   13   0317            BEQL    50$                                     ;IF EQL INVALID PROTECTION CODE
                  50   D7   0319            DECL    R0                                      ;CALCULATE RELATIVE BIT NUMBER IN FIELD
             50   58   C0   031B            ADDL    R8,R0                                   ;CALCULATE ACTUAL BIT NUMBER
        00   59   50   E5   031E            BBCC    R0,R9,30$                               ;ALLOW SPECIFIED ACCESS
             EC   57   F5   0322     30$:   SOBGTR  R7,20$                                  ;ANY MORE TO SCAN?
                  C4   11   0325            BRB     10$
                  59   DD   0327     40$:   PUSHL   R9                                      ;SET NEW DEFAULT PROTECTION ARGUMENT
                  7E   D4   0329            CLRL    -(SP)                                   ;ZERO ADDRESS OF RETURN DESCRIPTOR
             04   AE   DF   032B            PUSHAL  4(SP)                                   ;ADDRESS OF NEW PROTECTION
   00000000'9F    03   FB   032E            CALLS   #3,@#SYS$SETDFPROT                      ;SET DEFAULT PROTECTION
                       05   0335            RSB                                             ;
                            0336     50$:   STATUS  IVPROT                                  ;SET INVALID PROCTECTION CODE
                       05   033D            RSB                                             ;
                            033E     60$:   STATUS  IVKEYW                                  ;SET INVALID KEYWORD
                       05   0345            RSB                                             ;
```

```
                            0346          .SBTTL  SET VERIFY MODE
                            0346  ;+
                            0346  ; DCLSSETVERIFY - SET VERIFY MODE
                            0346  ;
                            0346  ; THIS ROUTINE IS CALLED AS AN INTERNAL COMMAND TO EXECUTE THE SET VERIFY
                            0346  ; MODE DCLS COMMAND.
                            0346  ;
                            0346  ; INPUTS:
                            0346  ;
                            0346  ;       R8 = ADDRESS OF SCRATCH BUFFER DESCRIPTOR.
                            0346  ;       R9 = ADDRESS OF SCRATCH STACK.
                            0346  ;       R10 = BASE ADDRESS OF COMMAND WORK AREA.
                            0346  ;       R11 = BASE ADDRESS OF PROCESS WORK AREA.
                            0346  ;
                            0346  ; OUTPUTS:
                            0346  ;
                            0346  ;       THE VERIFY MODE IS ESTABLISHED.
                            0346  ;-
                            0346
                            0346  DCLSSETVERIFY::                                           ;SET VERIFY MODE
                            0346
                            0346  ;
                            0346  ; PARSE THE COMMAND.
                            0346  ;
            FCB7'     30    0346          BSBW    DCLSGETDVAL                       ;GET OPTION DESCRIPTOR
         04  53       E9    0349          BLBC    R3,10$                            ;IF LBC VERIFICATION SPECIFIED
             56       D4    034C          CLRL    R6                                ;DISABLE ALL VERIFICATION
             3F       11    034E          BRB     40$                               ;IGNORE ANY KEYWORDS
      56     03       D0    0350  10$:    MOVL    #3,R6                             ;ASSUME ALL VERIFICATION IS SPECIFIE
            FCAA'     30    0353          BSBW    DCLSGETDVAL                       ;GET KEYWORD DESCRIPTOR
      55     04       D1    0356          CMPL    #PTR_K_ENDLINE,R5                 ;EOL?
             34       13    0359          BEQL    40$                               ;YES, THEN SET SPECIFIED MODES
      56     0F       D0    035B          MOVL    #15,R6                            ;ASSUME NO KEYWORDS ARE SPECIFIED
   62    50  8F       91    035E  20$:    CMPB    #^A/P/,(R2)                       ;IS FIRST CHAR "P"?
             07       13    0362          BEQL    25$                               ;YES, THEN PROCESS "PROCEDURE"
02 A2    50  8F       91    0364          CMPB    #^A/P/,2(R2)                      ;IS THIRD CHAR "P"?
             0E       12    0369          BNEQ    30$                               ;NO, THEN PROCESS "IMAGE"
      56     08       CA    036B  25$:    BICL    #8,R6                             ;INDICATE "PROCEDURE" SEEN
      56     02       C8    036E          BISL    #2,R6                             ;ENABLE PROCEDURE VERIFICATION
         11  53       E9    0371          BLBC    R3,35$                            ;IF LBC PROCEDURE VERIFY SPECIFIED
      56     02       CA    0374          BICL    #2,R6                             ;DISABLE PROCEDURE VERIFICATION
             0C       11    0377          BRB     35$                               ;GET NEXT
      56     04       CA    0379  30$:    BICL    #4,R6                             ;INDICATE "IMAGE" SEEN
      56     01       C8    037C          BISL    #1,R6                             ;ENABLE IMAGE VERIFICATION
         03  53       E9    037F          BLBC    R3,35$                            ;IF LBC IMAGE VERIFY SPECIFIED
      56     01       CA    0382          BICL    #1,R6                             ;DISABLE IMAGE VERIFICATION
            FC78'     30    0385  35$:    BSBW    DCLSGETDVAL                       ;GET KEYWORD DESCRIPTOR
      55     04       D1    0388          CMPL    #PTR_K_ENDLINE,R5                 ;EOL?
             02       13    038B          BEQL    40$                               ;YES, THEN SET SPECIFIED MODES
             CF       11    038D          BRB     20$                               ;GET NEXT
                            038F
                            038F  ;
                            038F  ; UPDATE PROCEDURE VERIFICATION STATE.
                            038F  ;
   10 56     03       E0    038F  40$:    BBS     #3,R6,50$                         ;BRANCH IF "PROC" NOT SPECIFIED
68 AB 0080   8F       A8    0393          BISW    #PRC_M_VERIFY,PRC_W_FLAGS(R11)    ;ASSUME VERIFICATION IS SPECIFIED
   06 56     01       E0    0399          BBS     #1,R6,50$                         ;BRANCH IF SO
   68 AB   0080 8F  AA  039D   618           BICW    #PRC_M_VERIFY,PRC_W_FLAGS(R11)  ;DISABLE VERIFICATION
      08 56     02  E1  03A3   619  50$:     BBC     #2,R6,60$                       ;BRANCH IF ''IMAGE'' SPECIFIED
                        03A7   620           STATUS  NORMAL                          ;SET STATUS
                    05  03AE   621           RSB                                     ;RETURN
```

```
                              03AF              .SBTTL  SET IMAGE VERIFY MODE
                              03AF      ;+
                              03AF      ; DCL$SETVERIFY_IMAGE - SET IMAGE VERIFY MODE
                              03AF      ;
                              03AF      ; THIS ROUTINE IS CALLED TO SET IMAGE VERIFY MODE.
                              03AF      ;
                              03AF      ; INPUTS:
                              03AF      ;
                              03AF      ;       R6 = IMAGE VERIFY FLAGS, LBC MEANS CLEAR, LBS MEANS SET
                              03AF      ;       R11 = BASE ADDRESS OF PROCESS WORK AREA.
                              03AF      ;
                              03AF      ; OUTPUTS:
                              03AF      ;
                              03AF      ;       THE IMAGE VERIFY MODE IS ESTABLISHED.
                              03AF      ;-
                              03AF
                              03AF      60$:
                              03AF      DCL$SETVERIFY_IMAGE::                                   ;SET IMAGE VERIFY MODE
                              03AF      ;
                              03AF      ; GET INPUT STREAM INFORMATION.
                              03AF      ;
          51    1C AB    D0   03AF              MOVL    PRC_L_INDFAB(R11),R1            ;GET ADDRESS OF GENERIC FAB
          52  00BC CB    D0   03B3              MOVL    PRC_L_IDFLNK(R11),R2            ;GET ADDR OF CURRENT IND FRAME
     0000'C1    04 A2    B0   03B8              MOVW    IDF_W_INPIFI(R2),FAB$W_IFI(R1)  ;GET INPUT IFI
                              03BE
                              03BE      ;
                              03BE      ; UPDATE IMAGE VERIFICATION STATE BOTH IN PRC AND FOR CURRENT INPUT STREAM.
                              03BE      ;
             0F 56       E9   03BE              BLBC    R6,70$                          ;BRANCH IF /NOIMAGE
                07       E0   03C1              BBS     #PRC_V_VERIMAGE,-               ;IF IMAGE VERIFY ALREADY SET,
          1B  00AF CB         03C3                      PRC_B_FLAGS2(R11),90$           ;  THEN DONE
  00AF CB   0080 8F      A8   03C7              BISW    #PRC_M_VERIMAGE,PRC_B_FLAGS2(R11);ENABLE IMAGE VERIFICATION
                0D       11   03CE              BRB     80$                             ;EXECUTE $MODIFY
                              03D0
                07       E1   03D0      70$:    BBC     #PRC_V_VERIMAGE,-               ;IF IMAGE VERIFY ALREADY CLEAR,
          0C  00AF CB         03D2                      PRC_B_FLAGS2(R11),90$           ;  THEN DONE
  00AF CB   0080 8F      AA   03D6              BICW    #PRC_M_VERIMAGE,PRC_B_FLAGS2(R11);DISABLE IMAGE VERIFICATION
                              03DD
                0B       10   03DD      80$:    BSBB    DCL$VERIFY_IMAGE                ;ENABLE OR DISABLE VERIFICATION
             07 50       E9   03DF              BLBC    R0,95$                          ;RETURN ERROR STATUS
                              03E2
                              03E2      90$:    STATUS  NORMAL                          ;RETURN SUCCESS
                         05   03E9      95$:    RSB                                     ;
```

```
                                03EA        .SBTTL  MODIFY INPUT STREAM CHARACTERISTICS
                                03EA    ;++
                                03EA    ; DCL$VERIFY_IMAGE - MODIFY THE INPUT STREAM CHARACTERISTICS.
                                03EA    ;
                                03EA    ; INPUTS:
                                03EA    ;
                                03EA    ;       R1 = INPUT FAB
                                03EA    ;       R11 = ADDRESS OF PRC DATA STRUCTURE
                                03EA    ;
                                03EA    ; OUTPUTS:
                                03EA    ;
                                03EA    ;       R0 = STATUS
                                03EA    ;--
                                03EA
                                03EA    DCL$VERIFY_IMAGE::
              012D CB      95   03EA            TSTB    PRC_B_EXONLYL(R11)              ;ARE WE IN EXE-ONLY MODE?
                   4B      12   03EE            BNEQ    90$                             ;YES, DON'T DO ANYTHING.
                                03F0
         08 68 AB   06     E0   03F0            BBS     #PRC_V_MODE,PRC_W_FLAGS(R11),10$;BRANCH IF NOT INTERACTIVE
            50      01     D0   03F5            MOVL    #1,R0                           ;ASSUME SUCCESS
                5C  AB     D5   03F8            TSTL    PRC_L_INDEPTH(R11)              ;BRANCH IF LEVEL 0
                    3E     13   03FB            BEQL    90$                             ;
          0000'C1   02     B0   03FD    10$:    MOVW    #RMESC_PPFECHO,FAB$L_CTX(R1)    ;SET TYPE CODE
              0002'C1      B4   0402            CLRW    FAB$L_CTX+2(R1)                 ;ZERO ISI VALUE
                    07     E1   0406            BBC     #PRC_V_VERIMAGE,-               ;IF IMAGE VERIFY SET,
            0B 00AF CB          0408                    PRC_B_FLAGS2(R11),20$           ;   THEN SET THE ISI
            50   18 AB     D0   040C            MOVL    PRC_L_INDOUTRAB(R11),R0         ;GET ADDR OF OUTPUT RAB
              0000'C0      B0   0410            MOVW    RAB$W_ISI(R0),-                 ;SET OUTPUT ISI
              0002'C1           0414                    FAB$L_CTX+2(R1)                 ;
                    51     DD   0417    20$:    PUSHL   R1                              ;SAVE R1
0000'C1   00000000'8F      C8   0419            BISL    #FAB$M_ESC,FAB$L_FOP(R1)        ;SET ESC BIT IN FOP
                                0422            $MODIFY FAB=(R1)                        ;MODIFY THE INPUT STREAM
                    51   8ED0   042B            POPL    R1                              ;RESTORE R1
0000'C1   00000000'8F      CA   042E            BICL    #FAB$M_ESC,FAB$L_FOP(R1)        ;CLEAR ESC BIT IN FOP
              0000'C1      D4   0437            CLRL    FAB$L_CTX(R1)                   ;
                           05   043B    90$:    RSB                                     ;RETURN STATUS
```

```
                              043C        .SBTTL  SET ON MODE
                              043C  ;+
                              043C  ; DCL$SETON - SET ON MODE
                              043C  ;
                              043C  ; THIS ROUTINE IS CALLED AS AN INTERNAL COMMAND TO EXECUTE THE SET ON
                              043C  ; MODE DCLS COMMAND.
                              043C  ;
                              043C  ; INPUTS:
                              043C  ;
                              043C  ;       R8 = ADDRESS OF SCRATCH BUFFER DESCRIPTOR.
                              043C  ;       R9 = ADDRESS OF SCRATCH STACK.
                              043C  ;       R10 = BASE ADDRESS OF COMMAND WORK AREA.
                              043C  ;       R11 = BASE ADDRESS OF PROCESS WORK AREA.
                              043C  ;
                              043C  ; OUTPUTS:
                              043C  ;
                              043C  ;       THE ON MODE IS ESTABLISHED.
                              043C  ;-
                              043C
                              043C  DCL$SETON::                                     ;SET ON MODE
              FBC1'    30     043C          BSBW    DCL$GETDVAL                     ;GET THE DESCRIPTOR FOR "ON"
                              043F          STATUS  NORMAL                          ;SET NORMAL COMPLETION STATUS
    51    6A AB        9E     0446          MOVAB   PRC_W_ONLEVEL(R11),R1           ;GET ADDRESS OF ON LEVEL CODE
       61    08        91     044A          CMPB    #8,(R1)                         ;CHECK "ON" LEVEL FOR RESERVED LEVEL
          07 53        E8     044D          BLBS    R3,20$                          ;BR IF OPTION WAS NEGATED (NOON)
             04        14     0450          BGTR    10$                             ;BR IF "ON" ALREADY ACTIVE
    61    01 A1        90     0452          MOVB    1(R1),(R1)                      ;RESET TO SAVED VALUE
                       05     0456  10$:    RSB                                     ;
             07        13     0457  20$:    BEQL    30$                             ;BR IF "ON" ALREADY AT RESEVED LEVEL
    01 A1    61        90     0459          MOVB    (R1),1(R1)                      ;SAVE PREVIOUS "ON" LEVEL
       61    08        90     045D          MOVB    #8,(R1)                         ;SET TO RESERVED LEVEL
                       05     0460  30$:    RSB                                     ;END OF NOON HANDLING
```

```
                                 0461            .SBTTL  SET CONTROL ENABLE/DISABLE
                                 0461      ;+
                                 0461      ; DCL$SETCTLY - SET CONTROL MODE
                                 0461      ;
                                 0461      ; THIS ROUTINE IS CALLED AS AN INTERNAL COMMAND TO EXECUTE THE SET CONTROL=KEY
                                 0461      ; MODE DCL$ COMMAND.
                                 0461      ;
                                 0461      ; INPUTS:
                                 0461      ;
                                 0461      ;       R8 = ADDRESS OF SCRATCH BUFFER DESCRIPTOR.
                                 0461      ;       R9 = ADDRESS OF SCRATCH STACK.
                                 0461      ;       R10 = BASE ADDRESS OF COMMAND WORK AREA.
                                 0461      ;       R11 = BASE ADDRESS OF PROCESS WORK AREA.
                                 0461      ;
                                 0461      ; OUTPUTS:
                                 0461      ;
                                 0461      ;       CONTROL Y AND OUT-OF-BAND AST'S ARE ENABLED OR DISABLED FOR THIS
                                 0461      ;       PROCESS.
                                 0461      ;-
                                 0461      DCL$SETCTLY::                                          ;SET CONTROL MODE
                    7E     D4    0461              CLRL    -(SP)                                  ;ALLOCATE CHAR MASK ON STACK
                 FB9A'     30    0463              BSBW    DCL$GETDVAL                            ;GET OPTION DESCRIPTOR
                                 0466              ASSUME  PTR_V_NEGATE EQ 20
              56    53     D0    0466              MOVL    R3,R6                                  ;SAVE [NO] STATUS FOR FUTURE USE
                                 0469
                 FB94'     30    0469              BSBW    DCL$GETDVAL                            ;GET FIRST LETTER
              04    55     91    046C              CMPB    R5,#PTR_K_ENDLINE                      ;END OF LINE?
                    04     12    046F              BNEQ    30$                                    ;IF YES, THEN ASSUME Y
                    3A     10    0471              BSBB    CTRLY                                  ;OTHERWISE, SET CONTROL_Y BY DEFAULT
                    2D     11    0473              BRB     80$                                    ;ALL DONE
                                 0475
   FBA2 CF    1A    62     3A    0475      30$:    LOCC    (R2),#26,CONTROL_CHARS                 ;GET INDEX OF LETTER
           00 6E    50     E2    047B              BBSS    R0,(SP),40$                            ;SET CHAR BIT IN MASK
                 FB7E'     30    047F      40$:    BSBW    DCL$GETDVAL                            ;GET NEXT PARAMETER
              04    55     91    0482              CMPB    R5,#PTR_K_ENDLINE                      ;END OF LINE?
                    EE     12    0485              BNEQ    30$                                    ;LOOP IF NOT
                                 0487
   51   0084 CB     6E     C9    0487      50$:    BISL3   (SP),PRC_L_OUTOFBAND(R11),R1    ;GET CHARACTER MASK
              0C    56     E9    048D              BLBC    R6,70$                                 ;IF LBC, THEN ENABLE SPECIFIED
           02 6E    19     E1    0490              BBC     #PRC_V_CTRLY,(SP),60$                  ;IF NOT CTRL/Y, THEN SKIP
                    17     10    0494              BSBB    CTRLY                                  ;DO SPECIAL CTRL/Y PROCESSING
   51   0084 CB     6E     CB    0496      60$:    BICL3   (SP),PRC_L_OUTOFBAND(R11),R1      ;SET MASK FOR DISABLE
          00000000'EF      16    049C      70$:    JSB     DCL$RESETOOB                           ;ENABLE/DISABLE APPROPRIATE AST ROUTINES
                                 04A2
              50    8E     D0    04A2      80$:    MOVL    (SP)+,R0                               ;RESTORE STACK
                                 04A5              STATUS  NORMAL                                 ;SET NORMAL COMPLETION STATUS
                           05    04AC              RSB                                            ;
                                 04AD
 0084 CB   02000000 8F     C8    04AD      CTRLY:  BISL    #PRC_M_CTRLY,PRC_L_OUTOFBAND(R11)  ;ASSUME ENABLE SPECIFIED
              0C    56     E9    04B6              BLBC    R6,10$                                 ;IF LBC, THEN ENABLE SPECIFED
 0084 CB   02000000 8F     CA    04B9              BICL    #PRC_M_CTRLY,PRC_L_OUTOFBAND(R11)  ;CLEAR CTRL/Y BIT IN MASK
                 FB3B'     30    04C2              BSBW    W^DCL$ONCTLYRST                        ;RESET CONTROL Y COMMAND TEXT
                           05    04C5      10$:    RSB
                                 04C6
```

```
                                   04C6              .SBTTL  SET PROMPT
                                   04C6      ;+
                                   04C6      ; DCL$SETPROMPT - SET PROMPT
                                   04C6      ;
                                   04C6      ; THIS ROUTINE IS CALLED AS AN INTERNAL COMMAND TO EXECUTE THE SET PROMPT
                                   04C6      ; DCLS COMMAND.
                                   04C6      ;
                                   04C6      ; INPUTS:
                                   04C6      ;
                                   04C6      ;       R8 = ADDRESS OF SCRATCH BUFFER DESCRIPTOR.
                                   04C6      ;       R9 = ADDRESS OF SCRATCH STACK.
                                   04C6      ;       R10 = BASE ADDRESS OF COMMAND WORK AREA.
                                   04C6      ;       R11 = BASE ADDRESS OF PROCESS WORK AREA.
                                   04C6      ;
                                   04C6      ; OUTPUTS:
                                   04C6      ;
                                   04C6      ;       THE DCL PROMPT STRING IS CHANGED.
                                   04C6      ;-
                                   04C6      DCL$SETPROMPT::                                        ;SET PROMPT
 00F1 CB    00000000'EF     B0     04C6              MOVW    DCL$CRLF,PRC_W_PMPTCTRL(R11);ASSUME /CONTROL
                                   04CF              SETBIT  PRC_V_CARRCNTL,PRC_W_FLAGS(R11)   ;SET CR/LF FLAG
                  FB2A'     30     04D3              BSBW    DCL$GETDVAL                    ;GET FIRST TOKEN
              00    55      91     04D6              CMPB    R5,#PTR_K_COMDQUAL             ;/[NO]CONTROL QUALIFIER?
                    0E      12     04D9              BNEQ    20$                            ;NO, THEN BRANCH
                                   04DB              ASSUME  PTR_V_NEGATE EQ 20             ;
                 08 53      E9     04DB              BLBC    R3,10$                         ;BRANCH IF NOT NEGATED
               00F1 CB      B4     04DE              CLRW    PRC_W_PMPTCTRL(R11)            ;SET NOCONTROL
                                   04E2              CLRBIT  PRC_V_CARRCNTL,PRC_W_FLAGS(R11)   ;INDICATE NO CR/LF
                  FB17'     30     04E6      10$:    BSBW    DCL$GETDVAL                    ;GET ''PROMPT'' TOKEN
                  FB14'     30     04E9      20$:    BSBW    DCL$GETDVAL                    ;GET PROMPT STRING
              04    55      91     04EC              CMPB    R5,#PTR_K_ENDLINE              ;IF PRESENT
                    11      12     04EF              BNEQ    30$                            ;THEN RESET THE PROMPT
            00000000'EF     D0     04F1              MOVL    DCL$T_PROMPT,-                 ;ELSE RESTORE THE DEFAULT
                 00F3 CB           04F7                      PRC_B_CONTINUE(R11)            ;
                  00'8F     90     04FA              MOVB    #DC[$C_PROMPTLEN,-             ;
                 00F0 CB           04FD                      PRC_B_PROMPTLEN(R11)           ;
                    18      11     0500              BRB     80$                            ;DONE
  50       000388FA 8F      D0     0502      30$:    MOVL    #CLI$_STRTOOLNG,R0             ;ASSUME STRING IS TOO LONG
              20    51      D1     0509              CMPL    R1,#ENT_K_MAX_PROMPT           ;IS IT TOO LONG?
                    13      1A     050C              BGTRU   90$                            ;YES, THEN ERROR
                                   050E              ASSUME  ENT_K_MAX_PROMPT LT 256        ;
 00F0 CB    51      03      81     050E              ADDB3   #3,R1,-                        ;SAVE LENGTH OF PROMPT
                                   0514                      PRC_B_PROMPTLEN(R11)           ;
 00F4 CB    62      51      28     0514              MOVC3   R1,(R2),PRC_G_PROMPT(R11)  ;SAVE PROMPT STRING
                                   051A      80$:    STATUS  NORMAL                         ;RETURN NORMAL STATUS
                            05     0521      90$:    RSB
                                   0522
                                   0522              .END
```

```
                                                                  L 9
SET                                     - SET PARAMETER DCLS COMMAND EXECUTION   16-SEP-1984 00:15:05  VAX/VMS Macro V04-00           Page  20
Symbol table                                                                      4-SEP-1984 23:43:09  [DCL.SRC]SET.MAR;1                  (12)

$$.TMP1                         = 00000001                   LNM$V_CONCEALED                 = 00000008
$$.TMP2                         = 00000061                   LNM$_ATTRIBUTES                 = 00000003
ACCESS                            00000000 R      02         LNM$_MAX_INDEX                  = 00000007
CLASS                             00000004 R      02         LNM$_STRING                     = 00000002
CLI$_DIRECT                     = 00038030                   LOG$C_PROCESS                   = 00000002
CLI$_INVUIC                     = 000381A8                   L_ATTR                          = 00000010
CLI$_IVKEYW                     = 00038060                   L_MAX_INDEX                     = 00000014
CLI$_IVPROT                     = 00038070                   MAX_TRANS_LVLS                  = 0000000A
CLI$_NORMAL                     = 00030001                   PCB$L_UIC                       = 000000BC
CLI$_STRTOOLNG                  = 000388FA                   PRC_B_CONTINUE                    000000F3
CONTROL_CHARS                     0000001D R      02         PRC_B_DEFRADIX                    000000AE
CTRLY                             000004AD R      02         PRC_B_EXMDEPMOD                   000000AD
CVTUIC                            00000143 R      02         PRC_B_EXMDEPWID                   000000AC
DCL$CRLF                          ********   X    02         PRC_B_EXONLYL                     0000012D
DCL$CVTUIC                        000000A5 RG     02         PRC_B_FLAGS2                      000000AF
DCL$C_PROMPTLEN                   ********   X    02         PRC_B_IMGFLAG                     00000078
DCL$GETDVAL                       ********   X    02         PRC_B_OUTFLAGS                    0000012C
DCL$ONCTLYRST                     ********   X    02         PRC_B_PROMPTLEN                   000000F0
DCL$RESETOOB                      ********   X    02         PRC_C_LENGTH                      00000534
DCL$SETCTLY                       00000461 RG     02         PRC_G_COMMANDS                    00000133
DCL$SETDEFALT                     00000159 RG     02         PRC_G_PROMPT                      000000F4
DCL$SETON                         0000043C RG     02         PRC_K_LENGTH                      00000534
DCL$SETPROMPT                     000004C6 RG     02         PRC_L_CURRKEY                     00000048
DCL$SETPROT                       000002D6 RG     02         PRC_L_EXMDEPADR                   000000A8
DCL$SETUIC                        00000037 RG     02         PRC_L_EXTARG                      00000094
DCL$SETVERIFY                     00000346 RG     02         PRC_L_EXTBLK                      0000008C
DCL$SETVERIFY_IMAGE               000003AF RG     02         PRC_L_EXTCOD                      0000009C
DCL$T_DSKNAM                      00000014 RG     02         PRC_L_EXTHND                      00000090
DCL$T_PROMPT                      ********   X    02         PRC_L_EXTPRM                      00000098
DCL$VERIFY_IMAGE                  000003EA RG     02         PRC_L_IDFLNK                      000000BC
ENT_K_MAX_PROMPT                = 00000020                   PRC_L_IMGACTSTS                   00000080
FAB$L_CTX                         ********   X    02         PRC_L_INDCLOCK                    0000007C
FAB$L_FOP                         ********   X    02         PRC_L_INDEPTH                     0000005C
FAB$M_ESC                         ********   X    02         PRC_L_INDFAB                      0000001C
FAB$W_IFI                         ********   X    02         PRC_L_INDINPRAB                   00000014
IDF_B_OUTFLAGS                    00000038                   PRC_L_INDOUTRAB                   00000018
IDF_C_LENGTH                      00000074                   PRC_L_INPRAB                      00000008
IDF_K_LENGTH                      00000074                   PRC_L_LASTKEY                     0000004C
IDF_L_FILENAME                    00000068                   PRC_L_LSTSTATUS                   000000B0
IDF_L_INPRABCTX                   0000000C                   PRC_L_ONCTLY                      000000B8
IDF_L_LNK                         00000000                   PRC_L_ONERROR                     0000006C
IDF_L_ONCTLY                      00000060                   PRC_L_OUTOFBAND                   000000B4
IDF_L_ONERROR                     00000008                   PRC_L_OUTRAB                      0000000C
IDF_L_OUTRABCTX                   00000024                   PRC_L_OUTRABCTX                   00000118
IDF_L_SEARCHCTX                   00000064                   PRC_L_PPFLIST                     00000070
IDF_Q_LABEL                       00000018                   PRC_L_RECALLPTR                   0000012F
IDF_Q_LOCAL                       00000010                   PRC_L_RESTART                     00000058
IDF_T_INPDVI                      0000003C                   PRC_L_SAVAP                       00000000
IDF_T_OUTDVI                      00000028                   PRC_L_SAVFP                       00000004
IDF_W_FLAG                        0000005E                   PRC_L_SEVERITY                    00000050
IDF_W_INPDID                      00000052                   PRC_L_SPWN                        000000C0
IDF_W_INPFID                      0000004C                   PRC_L_STACKLM                     000000A4
IDF_W_INPIFI                      00000004                   PRC_L_STACKPT                     000000A0
IDF_W_INPRFA                      00000058                   PRC_L_STATUS                      00000054
IDF_W_ONLEVEL                     00000006                   PRC_L_STS                         00000084
IDF_W_OUTIFI                      00000020                   PRC_L_STV                         00000088
IDF_W_OUTISI                      00000022                   PRC_L_SYMBOL                      00000060
```

```
                                                                              M  9
SET                                 - SET PARAMETER DCLS COMMAND EXECUTION   16-SEP-1984 00:15:05  VAX/VMS Macro V04-00         Page  21
Symbol table                                                                  4-SEP-1984 23:43:09  [DCL.SRC]SET.MAR;1                 (12)

PRC_L_TMBX                        00000074                 SYS$MODIFY                        ********  GX    02
PRC_L_TRMLIST                     00000010                 SYS$SETDDIR                       ********   X    02
PRC_M_CTRLY                     = 02000000                 SYS$SETDFPROT                     ********   X    02
PRC_M_VERIFY                    = 00000080                 SYS$TRNLNM                        ********  GX    02
PRC_M_VERIMAGE                  = 00000080                 SYS$TRNLOG                        ********  GX    02
PRC_Q_ALLOCREG                    00000020                 S_XLT_BUF                       = 0000011C
PRC_Q_COMMAND                     000000E0                 TABNAM                            00000008 R      02
PRC_Q_FLUSHTIME                   000000D0                 TABNAMSZ                        = 0000000C
PRC_Q_GLOBAL                      00000028                 T_STRING_BUF                    = 0000001C
PRC_Q_IMAGENAME                   000000D8                 WRK_B_CMDOPT                      FFFFFFC3
PRC_Q_KEYPAD                      00000040                 WRK_B_MAXPARM                     FFFFFFD0
PRC_Q_LABEL                       00000030                 WRK_B_MINPARM                     FFFFFFD1
PRC_Q_LOCAL                       00000038                 WRK_B_PARMCNT                     FFFFFFCE
PRC_Q_SAVEPRIV                    000000E8                 WRK_B_PARMSUM                     FFFFFFCF
PRC_T_OUTDVI                      0000011C                 WRK_B_RECALLCNT                   FFFFFFC5
PRC_V_CARRCNTL                  = 00000000                 WRK_B_VALLEV                      FFFFFFC4
PRC_V_CTRLY                     = 00000019                 WRK_B_VERBTYP                     FFFFFFC2
PRC_V_MODE                      = 00000006                 WRK_C_LENGTH                      FFFFF486
PRC_V_VERIMAGE                  = 00000007                 WRK_G_BUFFER                      FFFFF492
PRC_W_ASTIOSB                     000000C6                 WRK_G_INPBUF                      FFFFF896
PRC_W_ASTRETN                     000000C8                 WRK_G_RESULT                      FFFFF9B6
PRC_W_ASTSTATUS                   000000C4                 WRK_K_LENGTH                      FFFFF486
PRC_W_ATTMBX                      0000007A                 WRK_L_CHARPTR                     FFFFF48E
PRC_W_FLAGS                       00000068                 WRK_L_DISALLOW                    FFFFFFE6
PRC_W_INPCHAN                     00000064                 WRK_L_ERRORRTN                    FFFFF9AE
PRC_W_ONLEVEL                     0000006A                 WRK_L_EXPANDPTR                   FFFFF486
PRC_W_OUTIFI                      00000114                 WRK_L_IMAGE                       FFFFFFE2
PRC_W_OUTISI                      00000116                 WRK_L_MARKPTR                     FFFFF48A
PRC_W_OUTMBXCHN                   000000CA                 WRK_L_PAROUT                      FFFFFFD2
PRC_W_OUTMBXREF                   000000CE                 WRK_L_PMPTADDR                    FFFFF9A2
PRC_W_OUTMBXSIZ                   000000CC                 WRK_L_PROMPTRTN                   FFFFF9A6
PRC_W_PMPTCTRL                    000000F1                 WRK_L_PROPTR                      FFFFFFC6
PRC_W_WAITIOSB                    00000066                 WRK_L_QUABLK                      FFFFFFCA
PTR_B_LEVEL                       00000004                 WRK_L_READRTN                     FFFFF9AA
PTR_B_NUMBER                      00000005                 WRK_L_RECALLPTR                   FFFFFFEA
PTR_B_PARMCNT                     00000006                 WRK_L_RSLEND                      FFFFFFB6
PTR_B_VALUE                       00000000                 WRK_L_RSLNXT                      FFFFFFBA
PTR_C_LENGTH                      0000000C                 WRK_L_SAVAP                       FFFFFFF8
PTR_K_COLON                     = 00000002                 WRK_L_SAVFP                       FFFFFFFC
PTR_K_COMDQUAL                  = 00000000                 WRK_L_SAVSP                       FFFFFFF4
PTR_K_ENDLINE                   = 00000004                 WRK_L_SIGNALRTN                   FFFFFFD6
PTR_K_LENGTH                      0000000C                 WRK_L_SPECRTN                     FFFFF9B2
PTR_K_PARAMETR                  = 00000003                 WRK_L_TAB_VEC                     FFFFFFDE
PTR_L_DESCR                       00000000                 WRK_L_VERB                        FFFFFFBE
PTR_L_ENTITY                      00000008                 WRK_W_FLAGS                       FFFFFFF0
PTR_V_NEGATE                    = 00000014                 WRK_W_FLAGS2                      FFFFFFF2
Q_LOGNAM                        = 00000000                 WRK_W_IMGCHAN                     FFFFFFEE
Q_TABLE                         = 00000008                 WRK_W_PMPTLEN                     FFFFF99E
RAB$W_ISI                         ********   X    02       W_STRING_LEN                    = 00000018
RME$C_PPFECHO                   = 00000002                 _$$_                            = 000000EF
SCH$GL_CURPCB                     ********   X    02
SETUIC                            0000008F R      02
SS$_NOLOGNAM                      ********   X    02
SS$_NORMAL                        ********   X    02
SYS$ASCTOID                       ********  GX    02
SYS$CMKRNL                        ********  GX    02
SYS$CRELOG                        ********   X    02
```

```
                                        +----------------+
                                        ! Psect synopsis !
                                        +----------------+

PSECT name                      Allocation          PSECT No.  Attributes
----------                      ----------          ---------  ----------
.  ABS  .                       00000000  (    0.)  00 (  0.)  NOPIC    USR    CON    ABS    LCL NOSHR NOEXE NORD   NOWRT NOVEC BYTE
$ABS$                           FFFFFFFC  (    0.)  01 (  1.)  NOPIC    USR    CON    ABS    LCL NOSHR   EXE   RD     WRT NOVEC BYTE
DCL$ZCODE                       00000522  ( 1314.)  02 (  2.)  NOPIC    USR    CON    REL    LCL NOSHR   EXE   RD   NOWRT NOVEC BYTE

                                      +------------------------+
                                      ! Performance indicators !
                                      +------------------------+

Phase                     Page faults    CPU Time       Elapsed Time
-----                     -----------    --------       ------------
Initialization                      9    00:00:00.05    00:00:01.73
Command processing                 81    00:00:00.68    00:00:06.50
Pass 1                            308    00:00:12.24    00:00:38.76
Symbol table sort                   0    00:00:01.49    00:00:02.52
Pass 2                            146    00:00:02.71    00:00:07.51
Symbol table output                25    00:00:00.21    00:00:00.80
Psect synopsis output               2    00:00:00.02    00:00:00.02
Cross-reference output              0    00:00:00.00    00:00:00.00
Assembler run totals              571    00:00:17.41    00:00:57.85

The working set limit was 1500 pages.
63039 bytes (124 pages) of virtual memory were used to buffer the intermediate code.
There were 60 pages of symbol table space allocated to hold 944 non-local and 65 local symbols.
839 source lines were read in Pass 1, producing 18 object records in Pass 2.
50 pages of virtual memory were used to define 33 macros.

                                     +--------------------------+
                                     ! Macro library statistics !
                                     +--------------------------+

Macro library name                           Macros defined
------------------                           --------------
_$255$DUA28:[SYSLIB]SYSBLDMLB.MLB;1                     0
_$255$DUA28:[DCL.OBJ]DCL.MLB;1                         10
_$255$DUA28:[SYS.OBJ]LIB.MLB;1                          2
_$255$DUA28:[SYSLIB]STARLET.MLB;2                      14
TOTALS (all libraries)                                 26

1173 GETS were required to define 26 macros.

There were no errors, warnings or information messages.

MACRO/LIS=LIS$:SET/OBJ=OBJ$:SET MSRC$:SET/UPDATE=(ENH$:SET)+EXECML$/LIB+LIB$:DCL/LIB+SYS$LIBRARY:SYSBLDMLB/LIB
```

0073 AH-BT13A-SE
VAX/VMS V4.0

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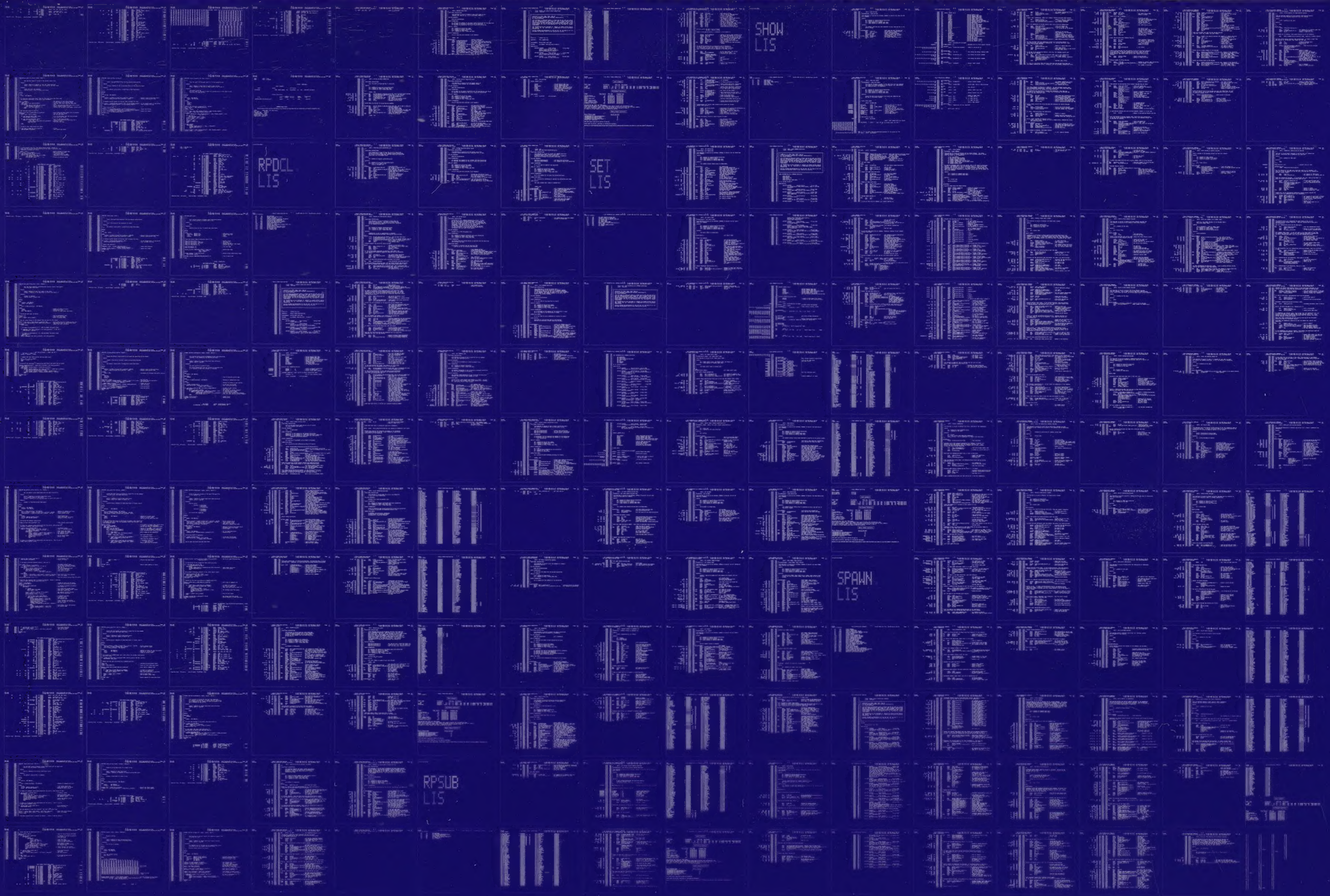
SHOW
LIS

RPDCL
LIS

SET
LIS

SPAWN
LIS

RPSUB
LIS